



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

SENIOR CERTIFICATE EXAMINATIONS *SENIORSERTIFIKAAT-EKSAMEN*

**MATHEMATICAL LITERACY P2/
*WISKUNDIGE GELETTERDHEID V2***

MARKING GUIDELINES/*NASIENRIGLYNE*

2018

MARKS/PUNTE: 150

Symbol/Kode	Explanation/Verduideliking
M	Method/ <i>Metode</i>
MA	Method with accuracy/ <i>Metode met akkuraatheid</i>
CA	Consistent accuracy/ <i>Volgehoue akkuraatheid</i>
A	Accuracy/ <i>Akkuraatheid</i>
C	Conversion/ <i>Herleiding</i>
S	Simplification/ <i>Vereenvoudiging</i>
RT	Reading from a table/a graph/document/diagram/ <i>Lees vanaf tabel/grafiek/diagram</i>
SF	Correct substitution in a formula/ <i>Korrekte vervanging in formule</i>
O	Opinion/Explanation/ <i>Opinie/Verduideliking</i>
P	Penalty, e.g. for no units, incorrect rounding off, etc./ <i>Penalisasie, bv. vir geen eenhede/verkeerde afronding, ens.</i>
R	Rounding off/ <i>Afronding</i>
NPR	No penalty for rounding/ <i>Geen penalisasie vir afronding nie</i>
AO	Answer only/ <i>Slegs antwoord</i>
MCA	Method with constant accuracy/ <i>Metode met volgehoue akkuraatheid</i>

**These marking guidelines consists of 15pages.
*Hierdie nasienriglyne bestaan uit 15 bladsye.***

NOTE:

- If a candidate answers a question TWICE, only mark the FIRST attempt.
- If a candidate has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled) version.
- Consistent accuracy (CA) applies in ALL aspects of the marking guideline, however it stops at the second calculation error.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra item presented.

LET WEL:

- As 'n kandidaat 'n vraag TWEE KEER beantwoord, merk slegs die EERSTE poging.
- As 'n kandidaat 'n antwoord van 'n vraag doodtrek(kanselleer) en nie oordoen nie, merk die doodgetrekte (gekanselleerde) poging.
- Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyne toegepas, dit hou op by die tweede berekeningsfout.
- Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.

QUESTION/VRAAG 1 [35 MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
1.1.1	$A = 367 \times 3 \quad \checkmark M$ $= 1\ 101 \quad \checkmark A$ $B = 15\ 726 \div 3 \quad \checkmark M$ $= 5\ 242 \quad \checkmark A$ <p style="text-align: center;">OR/OF</p> $A = \frac{367 \times 2\ 700}{900} \quad \checkmark M = 1\ 101 \quad \checkmark A$ $B = \frac{900 \times 15\ 726}{2\ 700} \quad \checkmark M = 5\ 242 \quad \checkmark A$	1M multiplying 1A simplification 1M dividing 1A simplification <p style="text-align: center;">OR/OF</p> 1M working with ratio 1A simplification 1M working with ratio 1A simplification AO (4)	D L2
1.1.2	1 Teacher + 3 learners = 4 persons $\checkmark A$ <i>1 Onderwyser + 3 leerders = 4 persone</i> Number of schools/Aantal skole = $32\ 712 \div 4 \quad \checkmark MA$ $= 8\ 178 \quad \checkmark CA$	1A total persons 1MA dividing by 4 1CA simplification AO (3)	D L2
1.2.1	$\text{Median\%/Mediaan\%} = \frac{\checkmark RT \quad \checkmark RT}{2} = 60 \quad \checkmark M$ $= 60 \quad \checkmark CA$	2RT correct values 1M median concept 1CA simplification AO (4)	D L2
1.2.2	$\text{Mean\%/Gemiddelde\%}$ $= \frac{36 + 42 + 48 + 58 + 60 + 61 + 62 + 76 + 86}{9} \quad \checkmark MA$ $= \frac{529}{9} \approx 58,78 \quad \checkmark CA$	1MA adding correct values 1A dividing by 9 1CA simplification AO NPR (3)	D L2

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
1.2.3	<p>IQR = Upper quartile – Lower quartile <i>IKO = Boonstekwartiel – Onderstekwartiel</i></p> <p>$16\% = 68\% - C$ ✓A ✓SF $C = 52\%$ ✓CA</p>	<p>1A value of Q3 1SF substituting 16% and Q3 1CA simplification (3)</p>	<p>D L3</p>
1.2.4	<p>✓✓O Matuli's mean is higher than Bianca's. <i>Matuli se gemiddeld is hoër as Bianca s'n.</i></p> <p>OR/OF Bianca's mean is lower. <i>Bianca se gemiddeld is laer.</i></p> <p>The range of Matuli's percentages ($86 - 48 = 38$) is smaller than Bianca's ($86 - 36 = 50$) <i>Die omvang van Matuli se persentasies ($86 - 48 = 38$) is kleiner as Bianca s'n ($86 - 36 = 50$)</i> ✓✓O</p> <p>OR/OF Bianca's range is bigger. <i>Bianca se omvang is groter.</i></p> <p>OR/OF</p> <p>The minimum Matuli scored was 48% which is better than Bianca's 36%. <i>Die minimum persentasie wat Matuli aangeteken het was 48 wat hoër as Bianca se 36% is</i> ✓✓O</p> <p>OR/OF Bianca's minimum is lower than Matuli's. <i>Bianca se minimum is laer as Matulis'n.</i></p>	<p>2O comparing mean marks 2O comparing range or minimum marks (4)</p>	<p>D L4</p>
1.3.1	<p>Probability of randomly choosing an Indian <i>Waarskynlikheid om 'n Indier te kies</i></p> <p>$= \frac{171}{4\,500\,000} \times 100\%$ ✓A ✓M $\approx 0,0038\% < 0,004\%$ ✓CA</p> <p>He is correct. ✓O <i>Hy is korrek.</i></p>	<p>1A numerator 1A denominator 1M percentage 1CA simplification 1O verification (5)</p>	<p>P L4</p>

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
1.3.2	<p>Difference/<i>Verskil</i> = Rs40 000 ✓A</p> $\text{Rs}40\,000 = \frac{40\,000}{63,41} \overset{\checkmark\text{MA}}{\text{US Dollar/Am. dollar}}$ $\frac{40\,000}{63,41} \text{ US dollar/Am. dollar} = \frac{40\,000}{63,41} \div 0,081 \text{ SA rand}$ $= \text{R } 630,8153\dots \div 0,081$ $\approx \text{R } 7\,787,84 \quad \checkmark\text{CA}$ <p style="text-align: center;">OR/OF</p> $\text{Rs}50\,000 = \frac{50\,000}{63,41} \overset{\checkmark\text{MA}}{\text{USD}} = 788,51916\dots \div 0,081 \overset{\checkmark\text{MA}}{\text{SA rand}}$ $\approx \text{R } 9\,734,80 \quad \checkmark\text{S}$ $\text{Rs } 10\,000 = \frac{10\,000}{63,41} \text{ USD} = 157,7038\dots \div 0,081 \text{ SA rand}$ $\approx \text{R } 1\,946,96 \quad \checkmark\text{S}$ <p>Difference/<i>Verskil</i> = R9 734,80 – R1 946,96</p> $= \text{R } 7\,787,84 \quad \checkmark\text{CA}$ <p style="text-align: center;">OR/OF</p> $\text{R}1 \div 0,081 = \text{R}12,35 \quad \checkmark\text{A}$ $\text{Rs}50\,000 \times \text{R}12,35 \div 63,45 \quad \checkmark\text{MA}$ $= \text{R } 9\,732,07 \quad \checkmark\text{S}$ $\text{Rs}10\,000 \times \text{R}12,35 \div 63,45$ $= \text{R } 1\,946,41 \quad \checkmark\text{S}$ $\text{R}9\,732,07 - \text{R}1\,946,41$ $= \text{R } 7\,785,66 \quad \checkmark\text{CA}$	<p>1A difference</p> <p>1MA convert to dollars</p> <p>1S simplification</p> <p>1MA convert to rand</p> <p>1CA simplification in rand</p> <p style="text-align: center;">OR/OF</p> <p>1MA convert to dollars</p> <p>1MA convert to rand</p> <p>1S simplification</p> <p>1S simplification</p> <p>1CA difference in rand</p> <p style="text-align: center;">OR/OF</p> <p>1A rand per dollar ratio</p> <p>1MA converting</p> <p>1S simplification</p> <p>1S simplification</p> <p>1CA difference in rand</p> <p>NPR</p> <p style="text-align: right;">(5)</p>	F L3
1.3.3	<p>Change received / <i>Kleingeld ontvang</i> = Rs4 000 – Rs2 440 = Rs1 560 ✓MA</p> $3 \times \text{Rs}500 = \text{Rs}1\,500$ $1 \times \text{Rs}50 = \text{Rs } 50$ $1 \times \text{Rs}10 = \text{Rs } 10 \quad \checkmark\text{MA}$ $5 \text{ notes} = \text{Rs}1\,560$ <p>✓A ✓O</p> <p>NOT VALID, 5 is the minimum</p> <p><i>NIE GELDIG nie, 5 is die minimum</i></p>	<p>1MA difference</p> <p>1MA breakdown of the change</p> <p>1A five</p> <p>1O not valid</p> <p style="text-align: right;">(4)</p>	F L4
		[35]	

QUESTION/VRAAG 2 [38MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
2.1.1	Right-hand side OR Western side ✓✓A <i>Regterkant OF Westelikekant</i>	2A correct side (2)	M&P L2
2.1.2 (a)	140 mm : 3 500 mm ✓MA 1 : 3 500 ÷ 140 ✓M = 1 : 25 ✓A	1MA values in correct order 1M dividing by 140 1A simplification (3)	M&P L3
2.1.2 (b)	Length/ <i>Lengte</i> = 6 000 ÷ 25 ✓MCA = 240 mm ✓CA = 24 cm ✓C OR/OF 140 : 3 500 ✓M <i>x</i> : 6 000 3 500 <i>x</i> = 840 000 ✓CA <i>x</i> = 240 mm = 24 cm ✓C	CA from 2.1.2(a) 1MCA dividing by scale factor 1CA length in mm 1C converting to cm OR/OF 1M concept of proportion 1CA length in mm 1C converting to cm (3)	M&P L3
2.1.3	Side door area/ <i>Sydeur opp.</i> = 2 000 mm × 800 mm ✓SF = 1 600 000 mm ² ✓A Garage door area/ <i>Motorhuisdeur opp.</i> = 2 400 mm × 2 100 mm ✓A = 5 040 000 mm ² Window area/ <i>Vensteropp.</i> = 1 500 mm × 900 mm = 1 350 000 mm ² ✓A Total area/ <i>Totale oppervlakte</i> ✓M = (1 600 000 + 5 040 000 + 1 350 000) mm ² = 7 990 000 mm ² ✓MCA	1SF substitution 1A side door area 1A garage door area 1A window area 1M adding 3 areas 1MCA simplification (6)	M L2

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
2.1.4	$41\,410\,000\text{ mm}^2 = 41,410\text{ m}^2 \quad \checkmark\text{C}$ Number of bricks/Aantal stene = $41,41 \times 68 \quad \checkmark\text{M}$ $= 2\,815,88 \quad \checkmark\text{CA}$ Number of pallets/Aantal palette = $2\,815,88 \div 500 \quad \checkmark\text{M}$ $= 5,63176 \quad \checkmark\text{S}$ $\approx 6 \quad \checkmark\text{R}$ OR/OF $41\,410\,000\text{ mm}^2 = 41,410\text{ m}^2 \quad \checkmark\text{C}$ Area covered by bricks of 1 pallet/ <i>Oppervlakte beslaan deur stene van 1 pallet</i> $= \frac{500}{68} = 7,35\text{ m}^2 \quad \checkmark\text{M} \quad \checkmark\text{CA}$ Number of pallets/Aantal palette = $\frac{41,41}{7,35} \quad \checkmark\text{M}$ $= 5,63 \quad \checkmark\text{S}$ $\approx 6 \quad \checkmark\text{R}$ OR/OF 68 bricks for $1\,000\,000\text{ mm}^2 \quad \checkmark\text{C}$ <i>68 stene vir $1\,000\,000\text{ mm}^2$</i> $\therefore 41\,410\,000\text{ mm}^2 = \frac{41\,410\,000 \times 68}{1\,000\,000} \quad \checkmark\text{M}$ $= 2\,815,88\text{ bricks/stene} \quad \checkmark\text{CA}$ Number of pallets/Aantal palette = $2\,815,88 \div 500 \quad \checkmark\text{M}$ $= 5,63176 \quad \checkmark\text{S}$ $\approx 6 \quad \checkmark\text{R}$	1C converting to m^2 1M multiplying 1CA simplification 1M dividing 1S simplification 1R rounding up OR/OF 1C converting to m^2 1M dividing 1CA area 1M dividing 1S simplification 1R number of pallets OR/OF 1C converting to mm^2 1M multiplying 1CA simplification 1M dividing 1S simplification 1R rounding up (6)	M L3
2.1.5	Cost/Koste $= \text{R}1\,685 \times 6 + \text{R}1\,575 + \text{R}629,95 + \text{R}1\,119,95 \quad \checkmark\text{MCA} \quad \checkmark\text{M}$ $= \text{R}13\,434,90 \quad \checkmark\text{CA}$ Not valid $\checkmark\text{O}$ <i>Nie geldig nie</i>	CA from Q2.1.4 1MCA brick cost 1M adding 4 values 1CA simplification 1O conclusion NPR (4)	F L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
2.1.6	<p>SI = Principal amount \times interest rate \times time in years <i>Enkelvoudige rente = Hoofsom \times rentekoers \times tyd in jaar</i></p> $= R35\,000 \times 8\% \times \frac{7}{12} \quad \checkmark\text{SF}$ $= R1\,633,33 \quad \checkmark\text{CA}$ <p>Total to be paid back/<i>Totale terug betaling</i></p> $= R35\,000 + R1\,633,33$ $= R36\,633,33 \quad \checkmark\text{CA}$ <p style="text-align: center;">OR/OF</p> $A = P(1 + in)$ $= R35\,000 \left(1 + 8\% \times \frac{7}{12} \right) \quad \checkmark\text{SF}$ $= R35\,000(1,04666\dots)$ $\approx R36\,633,33 \quad \checkmark\checkmark\text{CA}$	<p>1SF substituting correct values 1CA simplification</p> <p>1CA simplification</p> <p style="text-align: center;">OR/OF</p> <p>1SF substitution</p> <p>2CA total amount</p> <p style="text-align: right;">(3)</p>	F L3
2.2.1	<p>1 foot/<i>voet</i> = 12 inches/<i>duim</i></p> $= 12 \times 25,4 \text{ mm} \quad \checkmark\text{M}$ $= 304,8 \text{ mm}$ $= 0,3048 \text{ m} \quad \checkmark\text{C}$ $\therefore 6 \text{ m} = \frac{6}{0,3048} \text{ foot/voet}$ $\approx 19,685 \text{ feet/voet} \quad \checkmark\text{CA}$ <p>10 feet slopes $\frac{1}{2}$ inch <i>10 voet is laer met $\frac{1}{2}$ duim</i></p> $\therefore D = \frac{19,685}{10} \times \frac{1}{2} \quad \checkmark\text{M}$ $= 0,98425 \text{ inches/duim} \quad \checkmark\text{CA}$ $= 0,98425 \times 25,4 \text{ mm}$ $\approx 25 \text{ mm} \quad \checkmark\text{CA}$ <p style="text-align: center;">OR/OF</p>	<p>1M multiplying</p> <p>1C convert to m</p> <p>1CA convert to feet</p> <p>1M dividing and multiplying</p> <p>1CA simplification</p> <p>1CA simplification</p> <p style="text-align: center;">OR/OF</p>	M L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
	<p>6 m = 6 000 mm 25,4 mm = 1 inch/duim 6 000 mm = x inches/duim</p> <p>$x \times 25,4 = 6\,000$</p> <p>$x = \frac{6\,000}{25,4} \approx 236,22$ inches/duim ✓M ✓C</p> <p>236,22 inches/duim</p> <p>$= \frac{236,22}{12}$ feet/voet = 19,685 feet/voet ✓CA</p> <p>Slope ½ inch for 10 feet 10 voet is laer met ½ duim</p> <p>$\therefore D = \frac{19,685}{10} \times \frac{1}{2}$ ✓M</p> <p>= 0,98425 inches/duim ✓CA</p> <p>= 0,98425 × 25,4 mm</p> <p>≈ 25 mm ✓CA</p> <p style="text-align: center;">OR/OF</p> <p>½ inch/duim = 12,7mm ✓MA</p> <p>1 foot/voet = 12 inches/duim</p> <p>$\therefore 10$ feet/voet = 120 inches/duim ✓A</p> <p>$\therefore 120 \times 25,4 = 3\,048$ mm ✓C</p> <p>$\therefore 12,7$ mm : 3 048mm</p> <p>x : 6 000 mm</p> <p>$x = \frac{12,7 \times 6\,000}{3\,048}$ ✓M</p> <p>x = 25 mm ✓CA</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>OR</p> <p>120 inches: $\frac{1}{2}$ inch ✓A</p> <p>= 240:1 ✓S</p> <p>$\therefore 6m : D$ ✓M</p> <p>$D = \frac{6m}{240} = 0,025m$ ✓M ✓S</p> <p>= 25 mm ✓C</p> </div>	<p>1M divide</p> <p>1C convert to inches</p> <p>1CA convert to feet</p> <p>1M dividing and multiplying</p> <p>1CA convert to inches</p> <p>1CA simplification</p> <p style="text-align: center;">OR/OF</p> <p>1MA use of proportion</p> <p>1A feet to inches</p> <p>1M multiply</p> <p>1C conversion to mm</p> <p>1M use of proportion</p> <p>1CA simplification</p> <p style="text-align: right;">(6)</p>	
2.2.2	<p>Volume = $3,142 \times (40\text{ cm})^2 \times 1,20$ m ✓A ✓SF</p> <p>= $3,142 \times (40\text{ cm})^2 \times 120$ cm ✓C</p> <p>= $603\,264\text{ cm}^3$ ✓S</p> <p>= $603,264\text{ l}$ ✓C</p>	<p>1A radius</p> <p>1SF substituting</p> <p>1C converting height to cm</p> <p>1S simplification</p> <p>1C converting to litres</p> <p style="text-align: right;">(5)</p>	M L3
		[38]	

QUESTION/VRAAG3 [38MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
3.1.1	Local share /Plaaslike gedeelte $= R410,6 \times 20,12\%$ ✓MA $= R82,61272$ ✓CA $E = R453,4 + R410,6 + R82,61272$ ✓MCA $\approx R946,6$ ✓CA	1MA calculating 20,12% 1CA simplification 1MCA adding 1CA simplification NPR (4)	F L2
3.1.2	Percentage increase/Persentasieverhoging $= \frac{R546,1 - R490,00}{R490,00} \times 100\%$ ✓RT ✓M $= 11,4489... \% \approx 11,45\%$ ✓CA <p style="text-align: center;">OR/OF</p> Percentage/persentasie $R546,10 \div R490 \times 100\% = 111,45\%$ ✓RT Increase/Verhoging $111,45\% - 100\% = 11,45\%$ ✓M ✓MCA	1RT reading correct values 1M % increase 1CA simplification <p style="text-align: center;">OR/OF</p> 1RT correct values 1M subtracting 100% 1MCA simplification (3)	F L2
3.1.3	National government sector services the whole country and not just one province. <i>Nasionale regering sektor bedien die hele land en nie net een provinsie nie.</i> <p style="text-align: center;">OR/OF</p> National government sector assist provinces when the need arises like during drought, or wild fires. <i>Nasionale regeringsektor staan die provinsies by tydens droogte of brande.</i> <p style="text-align: center;">OR/OF</p> National government sector has more expenses. <i>Nasionale regeringsektor het meer uitgawes.</i> <p style="text-align: center;">OR/OF</p> National government sector employs more people. <i>Nasionale regeringsektor het meer mense indiens.</i>	2O explanation (2)	F L4

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
3.1.4	<p>Total ratio/<i>Totale verhouding</i></p> $= 1 + 4,784 + 5,246 = 11,03 \quad \checkmark\text{MA}$ <p>Local sector/<i>Plaaslike sektor</i></p> $= \frac{1 \checkmark\text{A}}{11,03} \times \text{R}1\,240,5 \text{ billion/miljard} \quad \checkmark\text{MCA}$ $= \text{R}112,466\dots \text{billion/miljard} \text{ or/of } \text{R}112\,466\,001\,800$ $\approx \text{R}112,5 \text{ billion/miljard} \text{ or/of } \text{R}112\,500\,000\,000 \quad \checkmark\text{S}$	<p>1MA adding ratio values</p> <p>1A fraction 1MCA multiplying</p> <p>1S simplification in billions NPR final answer</p> <p>(4)</p>	F L3
3.2	<p>Annual taxable income <i>Jaarlikse belasbare inkomste</i></p> $= 12 \times \text{R}46\,308,50 = \text{R}555\,702 \quad \checkmark\text{A}$ <p>Tax due/<i>Belasting verskuldig</i></p> $= \text{R}149\,475 + 39\% (\text{R}555\,702 - \text{R}555\,600) \quad \checkmark\text{RT} \quad \checkmark\text{SF}$ $= \text{R}149\,475 + 39\% (\text{R}102)$ $= \text{R}149\,514,78 \quad \checkmark\text{S}$ <p>Tax payable/<i>Belasting betaalbaar</i></p> $= \text{R}149\,514,78 - \text{R}13\,500 \quad \checkmark\text{M}$ $= \text{R}136\,014,78 \quad \checkmark\text{CA}$ <p>Monthly tax/<i>Maandelikse belasting</i></p> $= \text{R}136\,014,78 \div 12$ $= \text{R}11\,334,565 \approx \text{R}11\,334,57 \quad \checkmark\text{CA}$	<p>1A annual taxable income</p> <p>1RT correct tax bracket 1SF substitution or R102</p> <p>1S simplification</p> <p>1M subtracting rebate 1CA simplification</p> <p>1CA monthly tax</p> <p>(7)</p>	F L3

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
3.3.1	4 ✓✓A	2A number of boxes (2)	MP L2
3.3.2	<p>Number of sheets/<i>Aantal velle</i> = $\frac{2750}{4}$ ✓M = 687,5 ✓CA ∴ Not enough/<i>Nie genoeg nie</i> ✓O</p> <p style="text-align: center;">OR/OF</p> <p>Number of boxes/<i>Aantal kaste</i> = 687×4 ✓M = 2 748 ✓CA ∴ Not enough / <i>Nie genoeg nie</i> ✓O</p> <p style="text-align: center;">OR/OF</p> <p>Number of boxes per sheet <i>Aantal kaste per vel</i> = $\frac{2750}{687}$ ✓M = 4,002911208 ✓CA ∴ Not enough / <i>Nie genoeg nie</i> ✓O</p>	<p>CA from 3.3.1 1M dividing 1CA number of sheets 1O conclusion</p> <p style="text-align: center;">OR/OF</p> <p>1M multiplying 1CA number of boxes 1O conclusion</p> <p style="text-align: center;">OR/OF</p> <p>1M dividing 1CA number of boxes/sheet 1O conclusion (3)</p>	MP L4
3.3.3 (a)	<p>Income per box /<i>Inkomste per kas</i> = $\frac{R860\,000}{2\,000}$ ✓RT ✓M = R430 ✓CA</p>	<p>1RT reading correct value 1M division by 2 000 1CA income per box [Accept R400 – R430] (3)</p>	F L2
3.3.3 (b)	<p>✓✓RT 1 280 boxes/<i>kaste</i></p>	<p>2RT estimation [Accept 1 250 – 1 300] [Accept answer by calculation] (2)</p>	F L3

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
3.3.3 (c)	Variable cost per box <i>Veranderlike koste per kas</i> $= (R680\ 000 - R320\ 000) \div 2\ 000$ $= \frac{R360\ 000}{2\ 000} \quad \checkmark \text{CA}$ $= R180 \quad \checkmark \text{CA}$ Total Cost = Variable cost + Fixed cost <i>Totale koste = veranderlike koste + vaste koste</i> $= (R180 \times 2750) + R320\ 000 \quad \checkmark \text{MCA}$ $= R815\ 000 \quad \checkmark \text{CA}$ Income/ <i>Inkomste</i> = $R430 \times 2750 \quad \checkmark \text{M}$ $= R1\ 182\ 500 \quad \checkmark \text{CA}$ Profit/ <i>Wins</i> = $R1\ 182\ 500 - R815\ 000$ $= R367\ 500 \quad \checkmark \text{CA}$ Her projection is VALID $\checkmark \text{O}$ <i>Haar projeksie is GELDIG</i>	1CA using ANY TWO cost values or from Q3.3.3.(a)/(b) 1CA value 1MCA multiplying and adding 1 CA calculating cost 1M multiplying by 2 750 1CA income 1CA profit 1O conclusion (CA from Q3.3.3.(a)/(b))	F L4 (8)
			[38]

QUESTION/VRAAG4 [39MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
4.1.1	<p style="text-align: right;">✓✓O</p> <p>Staff working at the gates need to go home. <i>Mense wat by die hekke werk moet huis toe gaan.</i></p> <p style="text-align: right;">✓✓O</p> <p>The wild animals in the park makes it unsafe to travel or be in unprotected parts during the night. <i>Wilde diere in die park maak dit onveilig om te reis of in onbeskermdede gebiede te wees.</i></p> <p style="text-align: center;">OR/OF</p> <p style="text-align: right;">✓✓O</p> <p>Animals are not visible in the dark, park/camp gates open when people can see the animals. <i>Die diere is nie sigbaar in die donker; park/kamp hekke maak oop wanneer mense die diere kan sien.</i></p> <p style="text-align: center;">OR/OF</p> <p>To avoid overcrowding. <i>Om te voorkom dat dit oorvol is</i></p> <p style="text-align: right;">✓✓O</p> <p style="text-align: center;">OR/OF</p> <p>Access control/<i>Toegangsbeheer.</i> ✓✓O</p> <p style="text-align: center;">OR/OF</p> <p>Security reasons/Sekuriteitsredes. ✓✓O</p> <p style="text-align: center;">OR/OF</p> <p>So that people travelling from far or within the Kruger National Park, can plan ahead. <i>Sodat mense wat van ver kom of binne die Kruger Nasionale Park is, vooruit kan beplan.</i></p> <p style="text-align: right;">✓✓O</p> <p style="text-align: center;">OR/OF</p> <p>Accept any other valid answer. ✓✓O <i>Aanvaar enige ander geldige antwoord.</i></p>	<p>2O 1st reason</p> <p>2O 2nd reason</p> <p>(4)</p>	D L4
4.1.2	Skukuza ✓✓A	2A correct camp (2)	MP L2
4.1.3	<p>Orpen to/na Satara 48 km ✓RT</p> <p>Satara to Lower Sabie 93 km ✓RT</p> <p><i>Satara na Onder Sabie</i> 93 km</p> <p style="text-align: right;">✓A</p> <p>Total distance/<i>Totale afstand</i> = 48 km + 93 km = 141 km</p>	<p>1RT distance to Satara</p> <p>1RT distance to Sabie</p> <p>1A total distance (3)</p>	MP L3
4.1.4	<p>Main camps/<i>Hoofkampe</i> = 7 ✓RT</p> <p>Other camps/<i>Ander kampe</i> = 5</p> <p>Difference/<i>Verskil</i> = 7 – 5 = 2 ✓CA</p>	<p>1RT number of both camps</p> <p>1CA difference with 1 correct camp AO (2)</p>	MP L2

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4.1.5	<p>Distance = speed × time <i>Afstand = spoed × tyd</i></p> <p>$64 \text{ km} = 40 \text{ km/h} \times \text{time}$ ✓RT ✓SF</p> <p>Time on gravel road <i>Tyd op gruispad</i></p> <p>$= \frac{64 \text{ km}}{40 \text{ km/h}}$ ✓S</p> <p>$= 1,6 \text{ h}$ ✓CA</p> <p>$= 1\text{h}36 \text{ min}$ ✓C</p> <p>Time he will arrive at the gate is <i>Aankomstyd by die hek is</i></p> <p>$17:03 + 1\text{h}36 \text{ min}$ $= 18:39$ ✓CA</p>	<p>1RT distance 1SF substitution with 40 km/h</p> <p>1S change the formula</p> <p>1CA time 1C conversion</p> <p>1CA arrival time</p>	<p>M L3</p> <p>(6)</p>
4.1.6	<p>The roads are not so busy / people drive slower / more animals are visible. ✓✓O <i>Die paaie is nie so besig nie/ mense ry stadiger / diere is sigbaar.</i></p> <p>OR/OF</p> <p>It is the scenic route/<i>Sien meer op die pad.</i></p> <p>OR/OF</p> <p>The route blends in with nature and gives a more authentic bushveld experience. <i>Die roete smelt met die natuur saam en gee 'n ware bosveldervaring.</i></p> <p>OR/OF</p> <p>Gravel roads gives you more access (short cut) to different parts of the park. <i>Gruispaaie gee jou meer toegang (kortpad) tot verskillende dele van die park.</i></p> <p>OR/OF</p> <p>To experience a sense of adventure <i>Om avontuur te ervaar.</i></p> <p>Accept any other reasonable answer. <i>Aanvaar enige ander redelike antwoord.</i></p>	<p>2O reason</p>	<p>MP L4</p> <p>(2)</p>
4.2.1	<p>$P_{\text{Indian/Indiër}} = \frac{6}{4\ 081}$ ✓A or/of 0,00147 or/of 0,147% ✓A</p>	<p>1A numerator 1A denominator</p>	<p>P L2</p> <p>(2)</p>

Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
4.2.2	Coloured Employees /Kleurlingwerknemers ✓MA $622 - 80 - 141 = 401$ or/of $2\ 111 - (49 + 4 + 1\ 657) = 401$ P Coloured level B/Kleurlingvlak B $= \frac{401}{2\ 111}$ ✓CA or/of 0,18995 or/of 19% ✓A	1MA finding the missing value 1CA numerator 1A denominator (3)	P L3
4.3.1	$\begin{aligned} \text{Difference/Verskil} &= 260 \text{ USD} - 80 \text{ USD} \\ &= 180 \text{ USD} \end{aligned}$ ✓RT ✓RT ✓CA	1RT Jimbaran (255 – 265) 1RT Kula (70 – 85) 1CA difference (3)	F L2
4.3.2	The percentage occupancy decreased from 2011 to 2013 <i>Die persentasie besetting het gedaal van 2011 tot 2013</i> but increased again in 2014 <i>maar dit styg weer in 2014</i>	1O decrease 1O years 1O increase 1O year (4)	D L4
4.3.3	The average daily rates in Ubud had a increase. <i>Die daaglikse gemiddelde tarief in Ubud het skerp gestyg.</i> It affected the occupancy negatively or the occupancy percentage went down. <i>Dit het die besettingskoers negatief beïnvloed of die besettingskoers het gedaal.</i>	2O magnitude of the increase 2O effect on the occupancy percentage (4)	D L4
4.3.4	The first part of the graph represents the years 2010 to 2014/ or number of years. <i>Die eerste gedeelte stel jare voor /2010 tot 2014.</i> The second part of the graph represents Year to Date of September 2014 and September 2015 or the second part represents only ONE year from September to September the next year. <i>Die tweede gedeelte stel Jaar tot Datum voor of slegs EEN jaar van September 2014 tot September 2015.</i>	2O explanation of the first part 2O explanation of the second part. [Accept There is no relationship between the two parts of the graphs but Max 2 marks] (4)	D L4
		[39]	
TOTAL/TOTAAL :150			